

[*MECHANICAL SHUT-OFF VALVE* FOR GAS-ASSIST INJECTION MOLDING]

Abstract

A mechanical shut-off valve member for use with gas-assisted injection molding systems. A piston member is slidably positioned in a body member or housing and spring-biased to a closed position. The valve member is opened by the injection of plastic material through the valve member and into a mold cavity. The spring biasing force closes the valve member and shuts off the flow of plastic once the mold cavity is filled with the requisite amount of plastic material. The shut-off valve member prevents any back-flow of plastic material into the nozzle or injection molding machine during further steps in the injection molding process, including injection of gas or fluid into the plastic in the mold cavity.